

**U.S.ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY
540 S. MORRIS AVE., MONTGOMERY, AL 36115
U ANALYSES**

REPORT OF SAMPLE DELIVERY GROUP #1900152

Project: Canadian Radium and Uranium 9/19
 Analysis method: Isotopic Uranium Using NaOH Fusion
 Report ID: 1900152-U
 Report type: Original
 Date reported: 11/25/2019
 Total pages in report: 32

SAMPLES

NAREL Sample #	Client Sample ID	Location	Matrix	Date Collected	Date Received
B9.10537D	C008-SB001-036048-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10538E	C008-SB001-036048-02	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10539F	C008-SB001-108120-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10540Y	C008-SB002-024036-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10541Z	C008-SB002-060072-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10542A	C008-SB003-000012-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10543B	C008-SB003-072084-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10544C	C008-SB004-012024-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10545D	C008-SB004-084096-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10546E	C008-SB005-036048-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10547F	C008-SB005-060072-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10548G	C008-SB006-024036-01	NY:MT. KISCO	SOIL	09/08/2019	09/10/2019
B9.10549H	C008-SB006-060072-01	NY:MT. KISCO	SOIL	09/09/2019	09/10/2019
B9.10550A	C008-SB007-024036-01	NY:MT. KISCO	SOIL	09/09/2019	09/10/2019
B9.10551B	C008-SB007-060072-01	NY:MT. KISCO	SOIL	09/09/2019	09/10/2019
B9.10552C	C008-SB008-048060-01	NY:MT. KISCO	SOIL	09/09/2019	09/10/2019
B9.10553D	C008-SB008-084096-01	NY:MT. KISCO	SOIL	09/09/2019	09/10/2019
B9.10554E	C008-SB009-000012-01	NY:MT. KISCO	SOIL	09/09/2019	09/10/2019
B9.10555F	C008-SB009-072084-01	NY:MT. KISCO	SOIL	09/09/2019	09/10/2019

EXCEPTIONS

- Packaging and shipping** – Upon inspection at NAREL, it was discovered that the lid on sample B9.10551 was off the container. Client was informed and instructed NAREL to proceed with analysis of the sample as received.
- Documentation** – No problems were observed.
- Sample preparation** – No problems were encountered.
- Analysis** – No problems were encountered.
- Holding times** – No holding times were specified.

QUALITY CONTROL

- QC samples** – All QC analysis results met NAREL acceptance criteria.
- Yields** – All chemical yields were within acceptance limits.
- Instruments** – Response and background checks for all instruments used in these analyses met NAREL acceptance criteria.

ACCREDITATION



NAREL is accredited by the Oregon Environmental Laboratory Accreditation Program (ORELAP) to the TNI standard. NAREL maintains accreditation for all its radiological analyses except the following:

- Analyses of drinking water
- Gross alpha and gross beta of solid matrices, including swipes
- Tritium analysis of solid matrices, including swipes
- Analyses for Ra-226 by method NAREL RA-07-EC
- Analyses for Am-241 by method NAREL ACT-02F
- Curium-244/243

CERTIFICATION

I certify that this data report complies with the terms and conditions of the Project Acceptance Form and/or the Quality Assurance Project Plan, except as noted above. Release of the data contained in this report has been authorized by the Director of the Center for Environmental Radioanalytical Laboratory Science and the NAREL Quality Assurance Manager, or their designees, as verified by the following signatures.


for Velinda Herbert
Quality Assurance Manager, NAREL

11/25/19

Date


Cynthia White
Director, Center for Environmental Radioanalytical
Laboratory Science

11-25-19

Date

If you have questions about the data, please contact Cynthia White (white.cindy@epa.gov).

GENERAL INFORMATION

SAMPLE TYPES

BLD	Blind sample
FBK	Field blank
SAM	Normal sample

ANALYSIS QC TYPES

ANA	Normal analysis
DUP	Laboratory duplicate
LCS	Laboratory control sample, or blank spike
LCX	Laboratory control sample duplicate
MS	Matrix spike
MSD	Matrix spike duplicate (not currently analyzed)
RBK	Method blank
STD	External standard (used for ^{228}Ra yield determination)

QUALITY INDICATORS

RPD	Relative Percent Difference
%R	Percent Recovery
Z	Number of standard deviations by which a QC measurement differs from the expected value

RADIOCHEMICAL DATA

Radiochemical analyses usually require the subtraction of an instrument background measurement result from a gross sample measurement result. Both values are positive, but when the sample activity is low, random variations in the two measurements can cause the gross value to be less than the background, resulting in a measured activity less than zero. Although negative activities have no physical significance, they do have statistical importance, as for example in the evaluation of trends or the comparison of two groups of samples.

To the extent practical, it is the policy of NAREL to report results as generated, whether positive, negative, or zero, together with the "2-sigma" measurement uncertainty and a sample-specific estimate of the minimum detectable concentration (MDC). The measurement result, uncertainty, and MDC are always expressed in the same unit of measurement.

EVALUATION OF QC ANALYSES

A method blank result is considered unacceptable if it is more than 3 standard deviations below zero or more than 3 standard deviations above a predetermined upper control limit. For some analyses NAREL has set the upper control limit at zero. For others the control limit is a small positive number.

NAREL evaluates the results of duplicate and spike analyses using "Z scores." A Z score is the number of standard deviations by which the QC result differs from its ideal value. Generally the score is considered acceptable if its absolute value is not greater than 3.

The Z score for a spiked sample is computed by dividing the difference between the measured value and the target value by the combined standard uncertainty of the difference. The Z score for a duplicate analysis is computed by dividing the difference between the two measured values by the combined standard uncertainty of the difference.

NAREL reports the "relative percent difference," or RPD, between duplicate results and the "percent recovery," or %R, for spiked analyses, but does not use these values for evaluation of most analyses. An exception is the use of %R in the evaluation of gross alpha matrix spike results. A gross alpha matrix spike result is considered acceptable if either $|Z| \leq 3$ or $60 \leq \%R \leq 110$.

USEPA

Date Shipped: 9/9/2019

Carrier Name: FedEx

Airbill No.: 7761-3086-7836

CHAIN OF CUSTODY RECORD
 Canadian Platinum & Uranium Corp/NY
 Contact Name: Bernard Nwosu
 Contact Phone: 908-565-2980

No: 2-090919-0032-0030-0001
 Lab: NAREL
 Lab Contact: Tonya Hudson
 Lab Phone: 343-276-3433

Lab #	Sample #	Location	Matrix	Analyses	Sample Date	Sample Time	Container	Preservative	Lab QC
C008-SB001-036048-01 ✓	C008-SB001	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	14:10	✓ 2	32 oz poly	None	Y 84/05370
C008-SB001-036048-02 ✓	C008-SB001	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	14:10	1	32 oz poly	None	N 82/05381
C008-SB001-108120-01 ✓	C008-SB001	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	14:15	1	32 oz poly	None	N 87/05391
C008-SB002-024036-01 ✓	C008-SB002	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	15:25	1	32 oz poly	None	N 81/05407
C008-SB002-0680372-01 ✓	C008-SB002	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	15:30	1	32 oz poly	None	N 87/053412
C008-SB003-000012-01 ✓	C008-SB003	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	16:15	1	32 oz poly	None	N 83/05421
C008-SB003-072884-01 ✓	C008-SB003	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	16:20	1	32 oz poly	None	N 81/05433
C008-SB004-012024-01 ✓	C008-SB004	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	16:50	1	32 oz poly	None	N 83/0544C
C008-SB004-094096-01 ✓	C008-SB004	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	16:55	1	32 oz poly	None	N 83/0545C
C008-SB005-036048-01 ✓	C008-SB005	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	17:35	1	32 oz poly	None	N 87/0546E
C008-SB005-0600072-01 ✓	C008-SB005	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	17:40	1	32 oz poly	None	N 87/0547F
C008-SB006-024036-01 ✓	C008-SB006	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	18:15	1	32 oz poly	None	N 83/0548G
C008-SB008-080012-01 ✓	C008-SB008	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	18:20	1	32 oz poly	None	N 83/0549H
C008-SB007-024036-01 ✓	C008-SB007	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	08:20	1	32 oz poly	None	N 83/0530A
C008-SB007-0600072-01 ✓	C008-SB007	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	08:25	1	32 oz poly	None	N 83/0551B
C008-SB008-040060-01 ✓	C008-SB008	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	09:35	1	32 oz poly	None	N 83/0552C
C008-SB008-084096-01 ✓	C008-SB008	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	09:40	1	32 oz poly	None	N 83/0553D
C008-SB009-000012-01 ✓	C008-SB009	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	10:00	1	32 oz poly	None	N 83/0554E
C008-SB009-072884-01 ✓	C008-SB009	Soil	Alpha Spec (U, Th) & Gamma Spec	9/8/2019	10:25	1	32 oz poly	None	N 83/0555F

Special Instructions: Please email results to sunbabay@westonsolutions.com and ben.nwosu@westonsolutions.com. Samples to be run for isotopic thorium via NAREL ACT-02FT-H Isotopic Uranium via NAREL ACT-02F-U, other gamma isotopes via NAREL GM-01-RA, and Radium-226 and Radium-228 via 21-day ingrowth, 60 day TAT.

SAMPLES TRANSFERRED FROM	
CHAIN OF CUSTODY	

Item/Reason	Distinguished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples	Bernard Nwosu (Weston)	9/9/19 11:00	Anthony Chambers	9/9/19 11:00	Most sample missing a lid

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

ANALYSIS SUMMARY

Analysis method: NAREL ACT-02F-U
 Title: Isotopic Uranium Using NaOH Fusion

NAREL Sample #	Client Sample ID	QC Type	Date Completed	Preparation Batch #	Assay Batch #
B9.10537D	C008-SB001-036048-01		11/15/2019	0016820C	0024717L
B9.10537D	C008-SB001-036048-01	DUP	11/15/2019	0016820C	0024717L
B9.10538E	C008-SB001-036048-02		11/15/2019	0016820C	0024717L
B9.10539F	C008-SB001-108120-01		11/15/2019	0016820C	0024717L
B9.10540Y	C008-SB002-024036-01		11/15/2019	0016820C	0024717L
B9.10541Z	C008-SB002-060072-01		11/15/2019	0016820C	0024717L
B9.10542A	C008-SB003-000012-01		11/15/2019	0016820C	0024717L
B9.10543B	C008-SB003-072084-01		11/15/2019	0016820C	0024717L
B9.10544C	C008-SB004-012024-01		11/15/2019	0016820C	0024717L
B9.10545D	C008-SB004-084096-01		11/15/2019	0016820C	0024717L
B9.10546E	C008-SB005-036048-01	DUP	11/21/2019	0016831F	0024738R
B9.10546E	C008-SB005-036048-01		11/21/2019	0016831F	0024738R
B9.10547F	C008-SB005-060072-01		11/21/2019	0016831F	0024738R
B9.10548G	C008-SB006-024036-01		11/21/2019	0016831F	0024738R
B9.10549H	C008-SB006-060072-01		11/21/2019	0016831F	0024738R
B9.10550A	C008-SB007-024036-01		11/21/2019	0016831F	0024738R
B9.10551B	C008-SB007-060072-01		11/21/2019	0016831F	0024738R
B9.10552C	C008-SB008-048060-01		11/21/2019	0016831F	0024738R
B9.10553D	C008-SB008-084096-01		11/21/2019	0016831F	0024738R
B9.10554E	C008-SB009-000012-01		11/21/2019	0016831F	0024738R
B9.10555F	C008-SB009-072084-01		11/21/2019	0016831F	0024738R
LCS-00786565A *		LCS	11/15/2019	0016820C	0024717L
RBK-00786564Z *		RBK	11/15/2019	0016820C	0024717L
LCS-00786694J *		LCS	11/21/2019	0016831F	0024738R
RBK-00786693H *		RBK	11/21/2019	0016831F	0024738R

* Samples marked with an asterisk are not in this sample delivery group but were analyzed with it for QC purposes.

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SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10537D	Amount analyzed:	1.009e+00 GASH
Client sample ID:	C008-SB001-036048-01	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 14:10 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	94.64 %	Analyst:	SPK
Ash/dry weight:	95.64 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:21	1000.0	AS33	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	4.44e-01	9.2e-02	1.1e-02	2.9e-02	PCI/GDRY	11/14/2019 15:21 CST
U235	2.87e-02	2.5e-02	8.3e-03	2.7e-02	PCI/GDRY	11/14/2019 15:21 CST
U238	5.56e-01	1.1e-01	9.5e-03	2.7e-02	PCI/GDRY	11/14/2019 15:21 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10537D	Amount analyzed:	1.023e+00 GASH
Client sample ID:	C008-SB001-036048-01	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 14:10 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	94.64 %	Analyst:	SPK
Ash/dry weight:	95.64 %	QC type:	DUP
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:20	1000.0	AS34	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	4.04e-01	8.4e-02	6.5e-03	2.1e-02	PCI/GDRY	11/14/2019 15:20 CST
U235	2.02e-02	2.0e-02	5.4e-03	2.0e-02	PCI/GDRY	11/14/2019 15:20 CST
U238	4.40e-01	8.9e-02	7.9e-03	2.3e-02	PCI/GDRY	11/14/2019 15:20 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10538E	Amount analyzed:	1.030e+00 GASH
Client sample ID:	C008-SB001-036048-02	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 14:10 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	93.01 %	Analyst:	SPK
Ash/dry weight:	95.21 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:20	1000.0	AS35	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	4.20e-01	8.6e-02	6.4e-03	2.0e-02	PCI/GDRY	11/14/2019 15:20 CST
U235	3.57e-02	2.6e-02	5.3e-03	2.0e-02	PCI/GDRY	11/14/2019 15:20 CST
U238	3.55e-01	7.8e-02	8.8e-03	2.5e-02	PCI/GDRY	11/14/2019 15:20 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
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SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10539F	Amount analyzed:	1.004e+00 GASH
Client sample ID:	C008-SB001-108120-01	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 14:15 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	59.03 %	Analyst:	SPK
Ash/dry weight:	91.71 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:20	1000.0	AS36	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	8.15e-01	1.2e-01	8.4e-03	2.3e-02	PCI/GDRY	11/14/2019 15:20 CST
U235	5.03e-02	2.9e-02	6.6e-03	2.1e-02	PCI/GDRY	11/14/2019 15:20 CST
U238	6.96e-01	1.1e-01	3.8e-03	1.4e-02	PCI/GDRY	11/14/2019 15:20 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10540Y	Amount analyzed:	1.005e+00 GASH
Client sample ID:	C008-SB002-024036-01	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 15:25 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	88.87 %	Analyst:	SPK
Ash/dry weight:	86.80 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:20	1000.0	AS37	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	6.88e-01	1.3e-01	5.1e-03	1.9e-02	PCI/GDRY	11/14/2019 15:20 CST
U235	4.12e-02	3.0e-02	6.1e-03	2.3e-02	PCI/GDRY	11/14/2019 15:20 CST
U238	7.82e-01	1.4e-01	7.4e-03	2.4e-02	PCI/GDRY	11/14/2019 15:20 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
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SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10541Z	Amount analyzed:	1.006e+00 GASH
Client sample ID:	C008-SB002-060072-01	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 15:30 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	84.06 %	Analyst:	SPK
Ash/dry weight:	90.68 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:20	1000.0	AS38	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	5.27e-01	1.0e-01	1.0e-02	2.9e-02	PCI/GDRY	11/14/2019 15:20 CST
U235	2.25e-02	2.3e-02	9.8e-03	2.9e-02	PCI/GDRY	11/14/2019 15:20 CST
U238	6.04e-01	1.1e-01	1.0e-02	2.9e-02	PCI/GDRY	11/14/2019 15:20 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10542A	Amount analyzed:	1.018e+00 GASH
Client sample ID:	C008-SB003-000012-01	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 16:15 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	91.27 %	Analyst:	SPK
Ash/dry weight:	96.18 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:20	1000.0	AS39	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	4.07e-01	8.5e-02	6.6e-03	2.1e-02	PCI/GDRY	11/14/2019 15:20 CST
U235	4.80e-02	3.1e-02	7.9e-03	2.5e-02	PCI/GDRY	11/14/2019 15:20 CST
U238	4.33e-01	8.8e-02	4.6e-03	1.7e-02	PCI/GDRY	11/14/2019 15:20 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10543B	Amount analyzed:	9.996e-01 GASH
Client sample ID:	C008-SB003-072084-01	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 16:20 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	81.19 %	Analyst:	SPK
Ash/dry weight:	73.08 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:20	1000.0	AS40	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	1.75e+00	2.4e-01	6.7e-03	2.1e-02	PCI/GDRY	11/14/2019 15:20 CST
U235	9.99e-02	4.5e-02	5.5e-03	2.1e-02	PCI/GDRY	11/14/2019 15:20 CST
U238	1.78e+00	2.5e-01	8.1e-03	2.4e-02	PCI/GDRY	11/14/2019 15:20 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10544C	Amount analyzed:	1.037e+00 GASH
Client sample ID:	C008-SB004-012024-01	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 16:50 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	89.22 %	Analyst:	SPK
Ash/dry weight:	97.28 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:20	1000.0	AS65	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	5.06e-01	1.1e-01	1.7e-02	4.3e-02	PCI/GDRY	11/14/2019 15:20 CST
U235	2.61e-02	3.1e-02	1.9e-02	4.8e-02	PCI/GDRY	11/14/2019 15:20 CST
U238	5.29e-01	1.1e-01	2.0e-02	4.8e-02	PCI/GDRY	11/14/2019 15:20 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10545D	Amount analyzed:	1.029e+00 GASH
Client sample ID:	C008-SB004-084096-01	Preparation batch #:	0016820C
Matrix:	SOIL	Assay batch #:	0024717L
Collected:	2019-09-08 16:55 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	48.26 %	Analyst:	SPK
Ash/dry weight:	78.67 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:20	1000.0	AS68	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	1.91e+00	2.5e-01	6.3e-03	2.0e-02	PCI/GDRY	11/14/2019 15:20 CST
U235	6.41e-02	3.5e-02	9.2e-03	2.7e-02	PCI/GDRY	11/14/2019 15:20 CST
U238	1.96e+00	2.6e-01	4.4e-03	1.6e-02	PCI/GDRY	11/14/2019 15:20 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10546E	Amount analyzed:	1.056e+00 GASH
Client sample ID:	C008-SB005-036048-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-08 17:35 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	90.31 %	Analyst:	SPK
Ash/dry weight:	88.79 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:33	1000.0	AS99	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	7.25e-01	1.3e-01	8.6e-03	2.6e-02	PCI/GDRY	11/20/2019 14:33 CST
U235	2.65e-02	2.4e-02	5.9e-03	2.2e-02	PCI/GDRY	11/20/2019 14:33 CST
U238	6.73e-01	1.2e-01	1.2e-02	3.2e-02	PCI/GDRY	11/20/2019 14:33 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10546E	Amount analyzed:	1.009e+00 GASH
Client sample ID:	C008-SB005-036048-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-08 17:35 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	90.31 %	Analyst:	SPK
Ash/dry weight:	88.79 %	QC type:	DUP
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:33	1000.0	AS100	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	6.22e-01	1.1e-01	8.3e-03	2.5e-02	PCI/GDRY	11/20/2019 14:33 CST
U235	3.13e-02	2.7e-02	1.0e-02	3.0e-02	PCI/GDRY	11/20/2019 14:33 CST
U238	6.37e-01	1.2e-01	6.9e-03	2.2e-02	PCI/GDRY	11/20/2019 14:33 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10547F	Amount analyzed:	1.011e+00 GASH
Client sample ID:	C008-SB005-060072-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-08 17:40 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	81.14 %	Analyst:	SPK
Ash/dry weight:	90.29 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:33	1000.0	AS101	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	9.21e-01	1.6e-01	8.7e-03	2.8e-02	PCI/GDRY	11/20/2019 14:33 CST
U235	3.04e-02	2.9e-02	1.0e-02	3.3e-02	PCI/GDRY	11/20/2019 14:33 CST
U238	8.23e-01	1.5e-01	1.3e-02	3.6e-02	PCI/GDRY	11/20/2019 14:33 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10548G	Amount analyzed:	1.021e+00 GASH
Client sample ID:	C008-SB006-024036-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-08 18:15 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	95.38 %	Analyst:	SPK
Ash/dry weight:	98.58 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:33	1000.0	AS102	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	3.77e-01	8.5e-02	1.0e-02	2.9e-02	PCI/GDRY	11/20/2019 14:33 CST
U235	9.11e-03	1.9e-02	1.2e-02	3.5e-02	PCI/GDRY	11/20/2019 14:33 CST
U238	3.79e-01	8.6e-02	7.4e-03	2.3e-02	PCI/GDRY	11/20/2019 14:33 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10549H	Amount analyzed:	1.012e+00 GASH
Client sample ID:	C008-SB006-060072-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-09 18:20 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	79.29 %	Analyst:	SPK
Ash/dry weight:	86.11 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:33	1000.0	AS103	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	1.10e+00	1.8e-01	8.2e-03	2.6e-02	PCI/GDRY	11/20/2019 14:33 CST
U235	3.71e-02	3.1e-02	1.2e-02	3.5e-02	PCI/GDRY	11/20/2019 14:33 CST
U238	1.09e+00	1.8e-01	1.1e-02	3.2e-02	PCI/GDRY	11/20/2019 14:33 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10550A	Amount analyzed:	1.006e+00 GASH
Client sample ID:	C008-SB007-024036-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-09 08:20 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	85.05 %	Analyst:	SPK
Ash/dry weight:	37.87 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:34	1000.0	AS105	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	9.20e-01	1.2e-01	3.2e-03	1.0e-02	PCI/GDRY	11/20/2019 14:34 CST
U235	4.00e-02	1.9e-02	2.7e-03	1.0e-02	PCI/GDRY	11/20/2019 14:34 CST
U238	8.48e-01	1.2e-01	3.9e-03	1.2e-02	PCI/GDRY	11/20/2019 14:34 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10551B	Amount analyzed:	1.070e+00 GASH
Client sample ID:	C008-SB007-060072-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-09 08:25 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	85.12 %	Analyst:	SPK
Ash/dry weight:	88.68 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:34	1000.0	AS106	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	5.91e-01	1.1e-01	8.9e-03	2.5e-02	PCI/GDRY	11/20/2019 14:34 CST
U235	1.34e-02	1.9e-02	9.4e-03	2.8e-02	PCI/GDRY	11/20/2019 14:34 CST
U238	5.67e-01	1.0e-01	4.5e-03	1.7e-02	PCI/GDRY	11/20/2019 14:34 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10552C	Amount analyzed:	1.005e+00 GASH
Client sample ID:	C008-SB008-048060-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-09 09:35 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	94.57 %	Analyst:	SPK
Ash/dry weight:	98.42 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:34	1000.0	AS107	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	4.39e-01	9.7e-02	9.6e-03	2.9e-02	PCI/GDRY	11/20/2019 14:34 CST
U235	4.45e-02	3.2e-02	6.6e-03	2.5e-02	PCI/GDRY	11/20/2019 14:34 CST
U238	4.41e-01	9.7e-02	8.0e-03	2.5e-02	PCI/GDRY	11/20/2019 14:34 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10553D	Amount analyzed:	9.846e-01 GASH
Client sample ID:	C008-SB008-084096-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-09 09:40 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	20.50 %	Analyst:	SPK
Ash/dry weight:	27.77 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:34	1000.0	AS108	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	2.02e+00	2.2e-01	2.4e-03	7.1e-03	PCI/GDRY	11/20/2019 14:34 CST
U235	7.76e-02	2.3e-02	1.6e-03	6.2e-03	PCI/GDRY	11/20/2019 14:34 CST
U238	1.47e+00	1.6e-01	2.4e-03	7.1e-03	PCI/GDRY	11/20/2019 14:34 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10554E	Amount analyzed:	1.002e+00 GASH
Client sample ID:	C008-SB009-000012-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-09 10:00 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	95.17 %	Analyst:	SPK
Ash/dry weight:	96.68 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:34	1000.0	AS109	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	4.56e-01	9.6e-02	7.4e-03	2.4e-02	PCI/GDRY	11/20/2019 14:34 CST
U235	6.84e-02	3.8e-02	6.1e-03	2.3e-02	PCI/GDRY	11/20/2019 14:34 CST
U238	5.40e-01	1.1e-01	7.4e-03	2.4e-02	PCI/GDRY	11/20/2019 14:34 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	B9.10555F	Amount analyzed:	1.039e+00 GASH
Client sample ID:	C008-SB009-072084-01	Preparation batch #:	0016831F
Matrix:	SOIL	Assay batch #:	0024738R
Collected:	2019-09-09 10:05 EDT	Prep procedure:	N/A
Sample type:	SAM	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	84.76 %	Analyst:	SPK
Ash/dry weight:	93.63 %	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:34	1000.0	AS110	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	4.52e-01	9.4e-02	4.9e-03	1.8e-02	PCI/GDRY	11/20/2019 14:34 CST
U235	2.79e-02	2.6e-02	1.0e-02	3.1e-02	PCI/GDRY	11/20/2019 14:34 CST
U238	4.27e-01	9.1e-02	4.9e-03	1.8e-02	PCI/GDRY	11/20/2019 14:34 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	LCS-00786565A	Amount analyzed:	1.000e+00 SAMP
Client sample ID:	N/A	Preparation batch #:	0016820C
Matrix:	N/A	Assay batch #:	0024717L
Collected:	N/A	Prep procedure:	N/A
Sample type:	N/A	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	N/A	Analyst:	SPK
Ash/dry weight:	N/A	QC type:	LCS
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:21	1000.0	AS69	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	2.11e+00	2.5e-01	6.4e-03	2.0e-02	PCI	11/14/2019 15:21 CST
U235	7.80e-02	3.8e-02	7.7e-03	2.4e-02	PCI	11/14/2019 15:21 CST
U238	2.04e+00	2.4e-01	4.4e-03	1.7e-02	PCI	11/14/2019 15:21 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	RBK-00786564Z	Amount analyzed:	1.000e+00 SAMP
Client sample ID:	N/A	Preparation batch #:	0016820C
Matrix:	N/A	Assay batch #:	0024717L
Collected:	N/A	Prep procedure:	N/A
Sample type:	N/A	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	N/A	Analyst:	SPK
Ash/dry weight:	N/A	QC type:	RBK
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/14/2019 15:21	1000.0	AS70	CEB

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	3.34e-03	9.7e-03	4.4e-03	1.7e-02	PCI	11/14/2019 15:21 CST
U235	-1.33e-03	8.8e-03	7.7e-03	2.5e-02	PCI	11/14/2019 15:21 CST
U238	6.68e-03	1.2e-02	4.4e-03	1.7e-02	PCI	11/14/2019 15:21 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	LCS-00786694J	Amount analyzed:	1.000e+00 SAMP
Client sample ID:	N/A	Preparation batch #:	0016831F
Matrix:	N/A	Assay batch #:	0024738R
Collected:	N/A	Prep procedure:	N/A
Sample type:	N/A	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	N/A	Analyst:	SPK
Ash/dry weight:	N/A	QC type:	LCS
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:34	1000.0	AS111	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	1.92e+00	2.4e-01	5.2e-03	2.0e-02	PCI	11/20/2019 14:34 CST
U235	9.17e-02	4.5e-02	9.0e-03	2.9e-02	PCI	11/20/2019 14:34 CST
U238	2.01e+00	2.5e-01	7.5e-03	2.4e-02	PCI	11/20/2019 14:34 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG #1900152

SAMPLE ANALYSIS REPORT

Lab sample #:	RBK-00786693H	Amount analyzed:	1.000e+00 SAMP
Client sample ID:	N/A	Preparation batch #:	0016831F
Matrix:	N/A	Assay batch #:	0024738R
Collected:	N/A	Prep procedure:	N/A
Sample type:	N/A	Analysis method:	NAREL ACT-02F-U
Dry/wet weight:	N/A	Analyst:	SPK
Ash/dry weight:	N/A	QC type:	RBK
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
11/20/2019 14:34	1000.0	AS112	MO

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2\sigma$ Uncertainty	DLC	MDC	Unit	Reference Date
U234	0.00e+00	9.7e-03	8.3e-03	2.4e-02	PCI	11/20/2019 14:34 CST
U235	0.00e+00	1.2e-02	9.9e-03	2.8e-02	PCI	11/20/2019 14:34 CST
U238	1.45e-02	1.6e-02	6.0e-03	1.9e-02	PCI	11/20/2019 14:34 CST

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG 1900152

PREPARATION BATCH SUMMARY

Preparation batch #: 0016820C
 Analysis method: NAREL ACT-02F-U
 Preparation procedure: N/A

NAREL Sample #	Client Sample ID	Analysis #	QC Type	Yield	$\pm 2 \sigma$ Uncertainty	Analyst
B9.10537D	C008-SB001-036048-01	00783844R		73.43 %	6.79 %	SPK
B9.10537D	C008-SB001-036048-01	00786563Y	DUP	78.51 %	7.16 %	SPK
B9.10538E	C008-SB001-036048-02	00783848W		75.79 %	6.89 %	SPK
B9.10539F	C008-SB001-108120-01	00783852R		83.59 %	7.31 %	SPK
B9.10540Y	C008-SB002-024036-01	00783856W		63.36 %	6.15 %	SPK
B9.10541Z	C008-SB002-060072-01	00783860R		73.72 %	6.89 %	SPK
B9.10542A	C008-SB003-000012-01	00783864W		73.57 %	6.72 %	SPK
B9.10543B	C008-SB003-072084-01	00783868A		55.69 %	5.54 %	SPK
B9.10544C	C008-SB004-012024-01	00783872W		63.86 %	6.19 %	SPK
B9.10545D	C008-SB004-084096-01	00783876A		65.51 %	6.30 %	SPK
LCS-00786565A *		00786565A	LCS	84.65 %	7.53 %	SPK
RBK-00786564Z *		00786564Z	RBK	83.22 %	7.42 %	SPK

* Samples marked with an asterisk are not in this sample delivery group but were analyzed with it for QC purposes.

QC RESULTS FOR BATCH 0016820C

NAREL Sample #	Analysis #	QC Type	Analyte	%R	RPD	Z	Evaluation
B9.10537D	00786563Y	DUP	U234		9.4	-0.64	PASS
B9.10537D	00786563Y	DUP	U235		34.5	-0.52	PASS
B9.10537D	00786563Y	DUP	U238		23.4	-1.68	PASS
LCS-00786565A	00786565A	LCS	U234	107.9		1.25	PASS
LCS-00786565A	00786565A	LCS	U235	83.8		-0.79	PASS
LCS-00786565A	00786565A	LCS	U238	101.2		0.20	PASS
RBK-00786564Z	00786564Z	RBK	U234				PASS
RBK-00786564Z	00786564Z	RBK	U235				PASS
RBK-00786564Z	00786564Z	RBK	U238				PASS

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ANALYTICAL RADIATION ENVIRONMENTAL LABORATORY**

SDG 1900152

PREPARATION BATCH SUMMARY

Preparation batch #: 0016831F
 Analysis method: NAREL ACT-02F-U
 Preparation procedure: N/A

NAREL Sample #	Client Sample ID	Analysis #	QC Type	Yield	$\pm 2 \sigma$ Uncertainty	Analyst
B9.10546E	C008-SB005-036048-01	00783880W		63.54 %	6.17 %	SPK
B9.10546E	C008-SB005-036048-01	00786692G	DUP	71.02 %	6.71 %	SPK
B9.10547F	C008-SB005-060072-01	00783884A		55.07 %	5.58 %	SPK
B9.10548G	C008-SB006-024036-01	00783888E		70.03 %	6.56 %	SPK
B9.10549H	C008-SB006-060072-01	00783892A		57.04 %	5.76 %	SPK
B9.10550A	C008-SB007-024036-01	00783896E		60.70 %	5.90 %	SPK
B9.10551B	C008-SB007-060072-01	00783900G		69.04 %	6.53 %	SPK
B9.10552C	C008-SB008-048060-01	00783904L		68.84 %	6.59 %	SPK
B9.10553D	C008-SB008-084096-01	00783908Q		75.83 %	6.93 %	SPK
B9.10554E	C008-SB009-000012-01	00783912L		69.67 %	6.53 %	SPK
B9.10555F	C008-SB009-072084-01	00783916Q		69.51 %	6.59 %	SPK
LCS-00786694J *		00786694J	LCS	73.00 %	6.81 %	SPK
RBK-00786693H *		00786693H	RBK	94.23 %	8.23 %	SPK

* Samples marked with an asterisk are not in this sample delivery group but were analyzed with it for QC purposes.

QC RESULTS FOR BATCH 0016831F

NAREL Sample #	Analysis #	QC Type	Analyte	%R	RPD	Z	Evaluation
B9.10546E	00786692G	DUP	U234		15.3	-1.21	PASS
B9.10546E	00786692G	DUP	U235		16.5	0.27	PASS
B9.10546E	00786692G	DUP	U238		5.5	-0.43	PASS
LCS-00786694J	00786694J	LCS	U234	98.1		-0.30	PASS
LCS-00786694J	00786694J	LCS	U235	98.6		-0.06	PASS
LCS-00786694J	00786694J	LCS	U238	99.6		-0.06	PASS
RBK-00786693H	00786693H	RBK	U234				PASS
RBK-00786693H	00786693H	RBK	U235				PASS
RBK-00786693H	00786693H	RBK	U238				PASS